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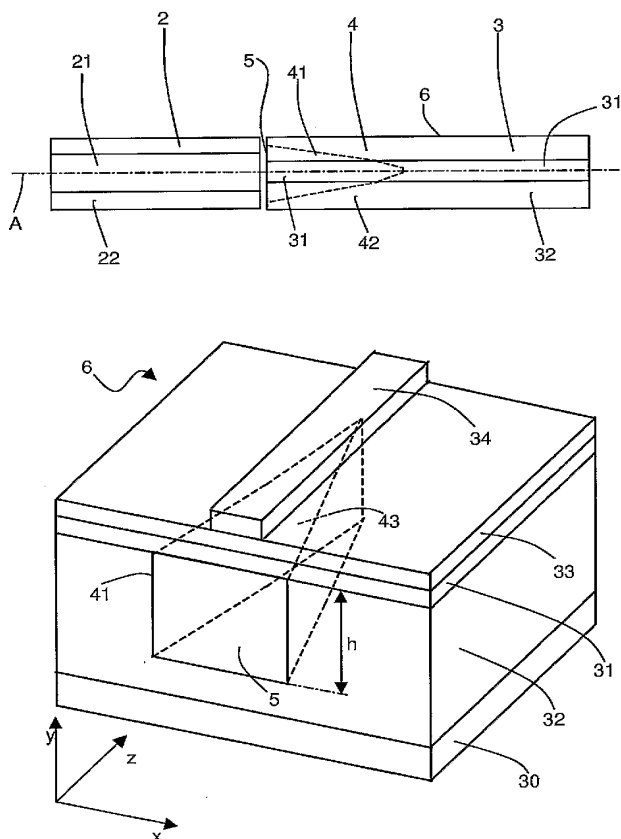
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(54) Title: OPTICAL COUPLING DEVICE



(57) Abstract: An optical mode converter comprises a cou-
pling waveguide (4) and a receiving waveguide (3). The cou-
pling waveguide has at an input end a first effective refractive
index n_{1eff} and includes a tapered core (41) of a substantially
constant refractive index n_1 with a substantially square cross
section at the input end (5), having a size that tapers down
moving away from the input end. The coupling waveguide
has also a cladding (42) at least partially surrounding the tapered
core. The receiving waveguide has a second effective
refractive index n_{2eff} at an output end and comprises a core
(31) of a substantially constant refractive index n_2 , greater
than the refractive index n_1 of the tapered core (41) of the
coupling waveguide, and a cladding (32) at least partially sur-
rounding the core. A side surface (43) of the tapered core of
the coupling waveguide (4) is optically in contact, in a cou-
pling portion, with the receiving waveguide (3) so as to allow
optical coupling between the coupling waveguide (4) and the
receiving waveguide (3). The refractive index n_1 of the tapered
core of the coupling waveguide (4) is selected so that the
first effective refractive index n_{1eff} and the second effective
refractive index n_{2eff} differ from each other in absolute
value less than 30% of the difference ($n_2 - n_{2eff}$) between the
core refractive index and the effective refractive index of the
receiving waveguide (3). A method for fabricating an optical
tapered waveguide is also disclosed.



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